

REMARKS

Initially, Applicant would like to express appreciation to the Examiner for the detailed Official Action provided, for the acknowledgment of Applicant's Claim for Priority and receipt of the certified copy of the priority document, and for the acknowledgment of Applicant's Information Disclosure Statement by return of the Form PTO-1449.

Applicant acknowledges with appreciation the Examiner's indication of allowable subject matter in claims 5 and 6.

Upon entry of the above amendment, claims 1, 5, and 6 will have been amended; and claim 4 will have been canceled. Accordingly, claims 1-3, 5, and 6 are currently pending. Applicant respectfully requests reconsideration of the outstanding objection and rejections and allowance of claims 1-3, 5, and 6 in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

The Examiner has objected to claim 5 for minor informalities. In response, Applicant has amended claim 5 as suggested by the Examiner. Accordingly, in view of the above noted amendments and remarks, it is believed that the objection to claim 5 has been overcome, and Applicant respectfully requests reconsideration and withdrawal of the outstanding objection.

The Examiner has rejected claims 1-6 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In response thereto, Applicant has amended claims 1, 5, and 6 as suggested by the Examiner. Claim 4 has been canceled. Accordingly, in view of the above noted amendments and remarks, claims 1-3, 5, and 6 are believed to fully comply with 35 U.S.C. § 112, second paragraph, and

Applicant respectfully requests reconsideration and withdrawal of the outstanding rejection under 35 U.S.C. § 112, second paragraph.

Claims 1-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AIHARA (U.S. Patent No. 5,771,765) in view of BENNETT (U.S. Patent No. 1,453,335).

Although Applicant does not necessarily agree with the Examiner's rejection of claim 1 on this ground, nevertheless, Applicant has amended independent claim 1 to clearly obviate the above noted ground of rejection in order to expedite prosecution of the present application. In this regard, Applicant notes that AIHARA and BENNETT fail to teach or suggest the subject matter claimed in amended claim 1. In particular, claim 1, as amended, sets forth a chip removing device in a band saw including, inter alia, a pair of brush support bodies that pivotally support a pair of brush shafts with brushes that contact both side surfaces of the saw blade; a driving mechanism that rotationally drives the pair of brush shafts; "a driving mechanism that rotationally drives the pair of brush shafts pivotally supported by the pair of brush support bodies in a manner such that a rotationally moving direction on a side where each of the pair of brushes provided on the pair of the brush shafts comes into contact with the band saw blade is the same direction of the running direction of the band saw blade; and a removing biasing unit that can bias the pair of brush support bodies in a direction approaching the band saw blade and in a direction separating away from the band saw blade, wherein each of the pair of brush support bodies and each of the pair of brush shafts are provided such that they can rock in the direction approaching the band saw blade and in the direction separating away from the band saw blade, each of the pair of brushes is biased toward the band saw blade so that the band saw blade is sandwiched with the pair of brushes, the pair of brush shafts are inclined in a forward and downward direction with respect to a running direction of the band saw blade, and each

of the pair of brushes is rotated from a blade root side toward a blade tip side of the band saw blade, thereby removing the chips from the band saw blade”.

This amendment is fully supported by the specification, including the claims and drawings, and no prohibited new matter has been added.

Applicant's claimed chip removing device in a band saw blade includes a pair of brush support bodies, with each brush support body pivotally supporting a brush. Each brush contacts one side surface of the blade such that the pair of brushes contacts both side surfaces of the blade. Further, the device includes a driving mechanism that rotationally drives the pair of brush shafts such that the direction of movement of each brush is the same as the direction of movement of the blade. See particularly figures 3 and 5. The rotational movement of the brushes is indicated by the semicircular arrows; the movement of the blade (the running direction) is indicated by arrow RD in figure 3. The device also includes a biasing unit that biases each brush toward the blade so that the blade is sandwiched between the pair of brushes.

Additionally, in Applicant's claimed chip removing device, the pair of brush shafts are inclined in a forward and downward direction with respect to the running direction of the band saw blade, so that each brush is rotated from a blade root side toward a blade tip side of the blade, thereby removing chips from the blade. This configuration of the inclined position of the brush shafts is shown in figures 3-5. The inclined position of the brush shafts produces a downward brushing action, thereby improving the chip removal from the blade. Accordingly, with the combined configuration of the pair of brushes rotating in the running direction of the saw blade, and the pair of brush shafts inclined in a forward and downward direction with respect to the running direction of the blade, the cutting chips generated by the cutting operation can be effectively and precisely removed from the gullet portion of the band saw blade. See particularly paragraphs [0033]-[0038] of

Applicant's specification. Therefore, as described herein, Applicant's claimed chip removing device in a band saw blade provides improvements and advantages over the prior art.

The AIRAHA patent teaches a sawdust removing apparatus for a saw including a band saw blade 15 and a brush 19. The position and orientation of the brush and brush shaft relative to the blade is clearly shown in figures 2 and 3. Clearly, in the AIRAHA device, the brush shaft is not driven such that *the rotationally moving direction of the brush shaft where the brush contacts the blade is the same direction as the running direction of the blade*, as in amended claim 1. Further, in the AIHARA device, the brush shaft is not inclined in a forward and downward direction with respect to a running direction of the band saw blade, and the brush shaft is not rotated from a blade root side toward a blade tip side of the band saw blade, as in amended claim 1. Thus, AIHARA fails to teach or suggest a brush support body that is driven in a manner such that the rotationally moving direction where the brush comes into contact with the band saw blade is the same direction of the running direction of the band saw blade; a brush shaft inclined in a forward and downward direction with respect to a running direction of the band saw blade, and a brush that is rotated from a blade root side toward a blade tip side of the band saw blade, thereby removing the chips from the band saw blade, as in amended claim 1. Additionally, as recognized by the Examiner, the AIHARA device does not include a pair of brushes, and a pair of brush shafts.

The BENNETT patent is directed to a saw with a pair of stationary, nonrotating brushes. Further, as clearly shown in figure 9, the brushes of BENNETT are directed squarely toward the blade, and the brushes are not inclined with respect to the blade in any direction or in any way. Thus, the brushes of BENNETT are not inclined in a forward and downward direction with respect to a running direction of the band saw blade, and the brushes are not directed from a blade root side toward a blade tip side of the blade, as in amended claim 1. Thus, since the brushes are stationary

and are directed squarely toward the blade, BENNETT fails to teach or suggest brushes that are driven in a manner such that the rotationally moving direction where the brush comes into contact with the band saw blade is the same direction of the running direction of the band saw blade; brush shafts inclined in a forward and downward direction with respect to a running direction of the band saw blade, and brushes that are rotated from a blade root side toward a blade tip side of the band saw blade, thereby removing the chips from the band saw blade, as in amended claim 1.

Therefore, the BENNETT patent fails to cure the deficiencies of the AIHARA device, and even assuming, arguendo, that the teachings of AIHARA and BENNETT have been properly combined, Applicant's claimed chip removing device in a band saw would not have resulted from the combined teachings thereof.

The Examiner has taken the position that that it would have been obvious to provide the brush of AIHARA in an inclined position because there are only three possible positions and it would have been obvious to try the inclined position. However, Applicant respectfully submits that it would not have been obvious to try an inclined position for the brush of the AIHARA device at least because the degree of inclination of the brushes affects the direction, quality, and quantity of chip removal. In other words, the amount of inclination of the brush shaft is not random or without consequences. Therefore, it would not have been obvious to try all positions of the brushes in the AIHARA device. Further, amended claim 1 sets forth a particular inclination, that is, an inclination in which the shafts are directed forward and downward, and are rotated from a blade root side toward a blade tip side of the band saw blade. Applicant has chosen a particular inclination for a purpose and which produces a particular desired result of removing chips. Therefore, even assuming, arguendo, that it would have been obvious to try an inclined brush in the AIHARA device, it still would not have been obvious to try the particular inclination of the shafts directed forward and

downward, and rotated from a blade root side toward a blade tip side of the band saw blade, as in Applicant's claimed invention.

Therefore, it is respectfully submitted that there is nothing in the prior art that would lead one of ordinary skill in the art to make the modification suggested by the Examiner in the rejection of claim 1 under 35 U.S.C. § 103(a) over AIHARA in view of BENNETT. Thus, the only reason to combine the teachings of AIHARA and BENNETT results from a review of Applicant's disclosure and the application of impermissible hindsight. Accordingly, the rejection of claim 1 under 35 U.S.C. § 103(a) over AIHARA in view of BENNETT is improper for all the above reasons and withdrawal thereof is respectfully requested.

COMMENTS ON EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

In response to the Reasons for Allowance attached to the outstanding Official Action, Applicant wishes to clarify the record with respect to the basis for the patentability of claims in the present invention.

In this regard, while Applicant does not disagree with the Examiner's indication that (as noted by the Examiner) the AIHARA patent "only discloses one spinning brush, so the specific features set forth in claim 5 regarding the interplay between the two brushes is more than a duplication of parts. There is no reason to use universal joints that connects the pair of second rotation drive shafts to the brush shafts, or to use a *pair* of drive bevel gears on a single drive shaft", Applicant further wishes to make clear that the claims in the present application recite a combination of features, and that patentability of these claims is also based on the totality of the features recited therein, which define over the prior art.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections, and an early indication of the allowance of claims 1-3, 5, and 6.

SUMMARY AND CONCLUSION

In view of the foregoing, it is submitted that the present amendment is proper and that none of the references of record, considered alone or in any proper combination thereof, anticipate or render obvious Applicant's invention as recited in claims 1-3, 5, and 6. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present amendment and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so.

Any amendments to the claims which have been made in this amendment, which do not narrow the scope of the claims, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered cosmetic in nature, and to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

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Should there be any questions, the Examiner is invited to contact the undersigned at the below listed number.

Respectfully submitted,
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